

IN THE CLAIMS:

Please cancel Claim 11 without prejudice or disclaimer of the subject matter recited therein.

Please amend Claims 1-10 and 12-14 and add new Claims 15-22 as follows.

1. (Currently Amended) A display device comprising:

a display panel having cathodes, gates, and anodes in which said cathodes and said gates are connected in a matrix manner;

an electron emitter which ~~may emit~~ emits electrons in a state where a voltage is applied only between said cathodes and said anodes and which is provided with said cathode;

in which display of ~~each of a plurality of~~ pixels in said display panel is performed under a dark state by stopping electron emission from said electron emitter for said anodes by applying a stop voltage between said cathodes and said gates, and

[[a]] control means which controls operation of a circuit for driving a display panel in such a way that a potential of each of said anodes becomes not less than a threshold value potential by which ~~said a~~ a potential of each of said anodes can perform electron emission from said electron emitter after a predetermined time elapse from starting of application of a drive voltage which ~~may provide~~ provides a specified display state or ~~said the~~ stop voltage between said cathodes and said gates when a display starting signal is generated.

2. (Currently Amended) The display device according to claim 1, wherein application of ~~said~~ the stop voltage between said ~~cathode~~ cathodes and said ~~gate~~ gates and ~~said~~ the drive voltage which ~~may provide said~~ provides the specified display state is performed for all ~~the~~ of said pixels of said display panel at the same time.

3. (Currently Amended) The display device according to claim 1, wherein a scanning selective potential is supplied to at least one line scanning wiring in said display panel, a scanning non-selective potential is supplied to ~~the~~ remaining scanning wirings in said display panel, a predetermined potential which generates the darkest state for each pixel is supplied to all ~~the~~ columns of said display panel in synchronization with supply of ~~said~~ the scanning selective potential or a predetermined modulation potential is supplied, whereby ~~said~~ the stop voltage or ~~said~~ the drive voltage which ~~may provide said~~ provides the specified state is applied between said cathodes and said gates.

4. (Currently Amended) The display device according to claim 1, wherein said display panel drive circuit has:

an anode power supply circuit for supplying ~~said~~ the anode potential;

a cathode drive circuit for driving said cathodes;

a gate drive circuit for driving said ~~gate~~ gates; and

a drive power supply circuit for supplying a driving reference voltage for generating a drive voltage which ~~may provide said~~ provides the stop voltage or said the specified display state to said cathode drive circuit and said gate drive circuit.

5. (Currently Amended) The display device according to claim 4, wherein said drive power supply circuit starts supplying said the driving reference ~~potential~~ voltage under a state where a drive potential for a logic circuit to said cathode drive circuit and said gate drive circuit, supply of said the driving reference ~~potential~~ voltage starts, and thereafter said cathode drive circuit and said gate drive circuit start application of said the stop voltage or said the driving voltage which ~~may provide said~~ provides the specified display state.

6. (Currently Amended) The display device according to claim 4, wherein a terminal when application of said the stop voltage or said the driving voltage which ~~may provide said~~ provides the specified display state, said anode power supply circuit holds said anode so as to have a specified potential sufficiently lower than said the threshold value potential which ~~may emit~~ emits electrons from said electron emitter under a state where a drive potential for a logic circuit is supplied to said anode power supply circuit.

7. (Currently Amended) The display device according to claim 4, wherein after application of said the stop voltage or said the drive voltage which ~~may provide said~~ provides the specified display state starts, application of drive voltage is permitted based on input

display image data from said cathode drive circuit and said gate drive circuit to said display panel.

8. (Currently Amended) The display device according to claim 1, wherein after ~~said the~~ voltage between ~~said~~ cathodes and ~~said~~ gates is transited from an unstable state to zero, application of ~~said the~~ stop voltage and ~~said the~~ drive voltage which ~~may provide~~ ~~said provides the~~ specified display state starts.

9. (Currently Amended) The display device according to claim 1, wherein any one of first and second supply steps is performed, said ~~first~~ first step of supplying scanning non-selective potential which ~~may apply~~ ~~said~~ applies the stop voltage irrespective of a potential of the other wiring to any one of cathode wirings and gate wirings which are defined by scanning wirings of said display panel; and

said second step of supplying a modulation potential which ~~may apply~~ applies a drive voltage that provides ~~said the~~ specified display state or ~~said the~~ stop voltage irrespective of a potential of the other wiring defined by said scanning wirings to any one of ~~said~~ cathode wirings and ~~said~~ gate wirings which are defined by modulation signal wirings[;],

whereby ~~said the~~ stop voltage or ~~said the~~ drive voltage which ~~may~~ ~~provide~~ ~~said~~ provides the specified display state is applied between said cathodes and ~~said~~ gates.

10. (Currently Amended) The display device according to claim 1, wherein a modulation potential to be supplied to any one of ~~said~~ cathode wiring and ~~said~~ gate wiring which are defined by modulation signal wirings of said display panel is a potential selected from three or more levels, and potentials at two or more levels from among them are potentials which generate a drive voltage which may emit electrons by allowing said two or more level potentials to be supplied in synchronization with said scanning selective potential, and one of them is a potential which generates ~~said~~ the stop voltage.

Claim 11. (Cancelled).

12. (Currently Amended) The display device according to claim ~~11~~ 1, wherein said ~~nano-constitutional body includes~~ emitter is at least one kind selected from carbon nanotube, graphite nanofiber, amorphous carbon, carbon nonohorne, graphite, diamond like carbon, diamond and fullerene.

13. (Currently Amended) A drive control method for a display device having a display panel having cathodes, gates, and anodes in which said cathodes and said gates are connected in a matrix manner~~[[:]]₁~~, and an electron emitter which ~~may emit~~ emits electrons in a state where a voltage is applied only between said cathodes and said anodes and which is provided with said cathode~~[[:]]₁~~ in which display of ~~each of~~ pixels of said display panel is

performed under a dark state by stopping electron emission from said electron emitter for said anodes by applying a stop voltage between said cathodes and said gates,

said method comprising:

[[a]] an application step of applying ~~said~~ the stop voltage or a drive voltage which ~~may provide~~ provides a specified display state between said cathodes and said gates when a display starting signal is generated; and

an anode voltage supplying step of allowing a potential of said anode not to be less than a threshold value potential which ~~may emit~~ emits electrons from said electron emitter after a predetermined time elapse from starting of said application step.

14. (Currently Amended) The drive control method for the drive device according to claim 13, wherein

a driving power supply circuit starts supplying a driving reference potential for generating ~~said~~ the stop voltage or a drive voltage which ~~may provide said~~ provides the specified display state to ~~said~~ a cathode drive circuit and ~~said~~ a gate drive circuit under a state where a drive potential for a logic circuit is supplied to a cathode drive circuit and a gate drive circuit;

thereafter, said application step starts, and at a starting time of said application step, an anode power supply circuit holds said anode at a specified voltage which is sufficiently lower than a threshold voltage which may perform electron emission from said

electron emitter under a state where ~~said the~~ drive potential for said logic circuit is supplied to ~~said an~~ anode power supply circuit; and

further thereafter, said anode ~~potential~~ voltage supplying step starts, said anode is held at a voltage which is sufficiently higher than ~~said the~~ threshold potential which ~~may perform~~ performs electron emission from said electron emitter, and application of said ~~the~~ drive voltage for display is permitted based on a display image input to said display panel from said cathode drive circuit and said gate drive circuit.

15. (New) A display device comprising:

a display panel having cathodes, gates, and anodes respectively connected to a cathode driving circuit, a gate driving circuit, and an anode power source circuit, in which said cathodes and said gates are connected in a matrix manner; an electron emitter which emits electrons in a state where a voltage is applied only between said cathode and said anode, said electron emitter being provided with said cathode, in which display of a plurality of pixels in said display panel is performed under a dark state by stopping electron emission from said electron emitter to said anodes by applying a stop voltage between said cathodes and said gates; and

a control circuit which controls said cathode driving circuit, said gate driving circuit, and said anode power source circuit,

wherein said control circuit outputs a display starting signal to said cathode driving circuit, said gate driving circuit, and said anode power source circuit, and

controls operations of circuits for driving the display panel in such a way that a potential of each of said anodes becomes not less than a threshold value potential by which said potential of each of said anodes can perform electron emission from said electron emitter after a predetermined time elapse from starting of application of a drive voltage which provides a specified display state or the stop voltage between said cathodes and said gates after a predetermined time elapse from a time at which the display starting signal is outputted after potentials of said cathode and said gate are kept at a same potential.

16. (New) The display device according to claim 15, wherein said electron emitter includes at least one kind selected from carbon nanotube, graphite nanofiber, amorphous carbon, carbon nonohorne, graphite, diamond like carbon, diamond and fullerene.

17. (New) A drive control method of a display device having a display panel having cathodes, gates, and anodes in which said cathodes and said gates are connected in a matrix manner; an electron emitter which emits electrons in a state where a voltage is applied only between said cathodes and said anodes, said electron emitter being provided with said cathode, in which display of a plurality of pixels in said display panel is performed under a dark state by stopping electron emission from said electron emitter to said anodes by applying a stop voltage between said cathodes and said gates, said method comprising:

a step of generating a display starting signal;

an application step of applying a drive voltage which provides said stop voltage or a specified display state between said cathodes and said gates after a predetermined time elapse from a time at which the display starting signal is generated after potentials of said cathode and said gates are kept at a same potential; and

an anode potential supplying step of allowing a potential of each of said anodes not to be less than a threshold value potential which emits electrons from said electron emitter after a predetermined time elapse from starting of said application step.

18. (New) A display device comprising:

a display panel having cathodes, gates, and anodes respectively connected to a cathode driving circuit, a gate driving circuit, and an anode power source circuit, in which said cathodes and said gates are connected in a matrix manner; an electron emitter which emits electrons in a state where a voltage is applied only between said cathode and said anode, said electron emitter being provided with said cathode, in which display of a plurality of pixels in said display panel is performed under a dark state by stopping electron emission from said electron emitter to said anodes by applying a stop voltage that a potential of each of said gates is lower than a potential of each of said cathodes between said cathodes and said gates; and

a control circuit which controls said cathode driving circuit, said gate driving circuit, and said anode power source circuit,

wherein said control circuit outputs a display starting signal to said cathode driving circuit, said gate driving circuit, and said anode power source circuit, and

controls operations of circuits for driving the display panel in such a way that a potential of each of said anodes becomes not less than a threshold value potential necessary to perform electron emission from said electron emitter by the potential of each of said anodes after a predetermined time elapse from starting of application of the stop voltage between said cathodes and said gates of all pixels of said display panel at the same time after a predetermined time elapse from a time at which the display starting signal is outputted after potentials of said cathode and said gate are kept at a same potential.

19. (New) The display device according to claim 18, wherein a scanning selective potential is supplied to at least one line scanning wiring of said display panel, a scanning non-selective potential is supplied to remaining scanning wirings, said stop voltage is applied between said cathodes and said gates by supplying a modulation potential which generates the darkest state for each pixel to all modulation signal wirings of said display panel in synchronization with supply of said scanning selective potential.

20. (New) The display device according to claim 18, wherein after the voltage between cathodes and gates is transited from an unstable state to zero, application of the stop voltage starts.

21. (New) The display device according to claim 18, wherein said electron emitter includes at least one kind selected from carbon nanotube, graphite nanofiber, amorphous carbon, carbon nonohorne, graphite, diamond like carbon, diamond and fullerene.

22. (New) A drive control method of a display device having a display panel having cathodes, gates, and anodes, in which said cathodes and said gates are connected in a matrix manner; an electron emitter which emits electrons in a state where a voltage is applied only between said cathode and said anode, said electron emitter being provided with said cathode, in which display of each of pixels is performed under a dark state by stopping electron emission from said electron emitter to said anodes by applying a stop voltage that a potential of each of said gates is lower than a potential of each of said cathodes between and said gates, said method comprising:

a step of generating a display starting signal;

an application step of applying a stop voltage between said cathodes and said gates of all pixels of said display panel at the same time after a predetermined time elapse from a time at which the display starting signal is generated after potentials of said cathode and said gate are kept at a same potential; and

an anode potential supplying step of allowing a potential of said anodes not to be less than a threshold value potential necessary to perform electron emission from said electron emitter after a predetermined time elapse from starting of said application step.